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EXAMINER
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QUAN, ELIZABETH S

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 01/29/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/872,817

Applicant(s)

PERRY, BRIAN A.

Examiner

Elizabeth Quan

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Drawings*

1. This application has been filed with informal drawings, which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

3. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Referring to claim 1, it is unclear what the vacuum manifold is “interchangeably accommodating.” It appears the manifold is accommodating both a multi-well plate and one or a plurality of individual chromatography columns terminating in male portions of one or a plurality of male-female type airtight manually operable connectors.

### *Claim Rejections - 35 USC § 102*

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 3 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,832,842 to Limb.

Referring to claim 3, Limb discloses a vacuum manifold (10) for accommodating an adapter and receptacle (12) (see ABSTRACT; FIGS. 1, 2, 5, 6, and 8; COL. 1, lines 44-47). The adapter comprises a plate (16) and plurality of individually removable plugs (84) (see FIGS. 1, 2, 5, 6, and 8; COL. 1, lines 44-47; COL. 3, lines 3-30). The plate (16) has a plurality of through-passages (38) embedded with a female portion (53) of a male-female-type airtight manually operable connector (52,53) (see FIGS. 1, 2, 5, 6, and 8; COL. 1, lines 66 and 67; COL. 2, lines 36-51 and 64-68; COL. 3, lines 1 and 2). Each of the plugs (84) is shaped to mate with a through-passage (56) of one of the female portions (53) to form a substantially airtight closure of the through-passage (56) (see FIG. 8; COL. 3, lines 3-30). The receptacle (12) with an open top has a port (32) for drawing a partial vacuum in the receptacle (12) (FIGS. 1, 2, and 5; COL. 1, lines 44-52 and 62-65). The receptacle (12) has a shoulder (18a) encircling along an inner edge (18) of the open top for supporting the plate (16) across the open top (see FIGS. 1, 2, and 5-8; COL. 1, lines 44-61). The vacuum manifold is designed to produce a vacuum-induced flow through all the through-passages (38) of a multi-well plate, and the adapter renders the vacuum manifold (10) usable for producing vacuum-induced flow through one or a plurality of filtering components (70) terminating in male portions of male-female-type airtight manually operable connectors (see ABSTRACT; FIGS. 1-8; COL. 1, lines 44-65; COL. 2, lines 22-30; COL. 3, lines 13, 14, and 20-39). Therefore, Limb includes all the limitations in claims 3.

Art Unit: 1743

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,832,842 to Limb in view of U.S. Patent No. 6,491,873 to Roberts et al.

Referring to claim 1, Limb discloses a vacuum manifold (10) for accommodating an adapter and receptacle (12) (see ABSTRACT; FIGS. 1, 2, 5, 6, and 8; COL. 1, lines 44-47). The adapter comprises a plate (16) and plurality of individually removable plugs (84) (see FIGS. 1, 2, 5, 6, and 8; COL. 1, lines 44-47; COL. 3, lines 3-30). The plate (16) has a plurality of through-passages (38) embedded with a female portion (53) of a male-female-type airtight manually operable connector (52,53) (see FIGS. 1, 2, 5, 6, and 8; COL. 1, lines 66 and 67; COL. 2, lines 36-51 and 64-68; COL. 3, lines 1 and 2). Each of the plugs (84) is shaped to mate with a through-passage (56) of one of the female portions (53) to form a substantially airtight closure of the through-passage (56) (see FIG. 8; COL.

Art Unit: 1743

3, lines 3-30). The receptacle (12) with an open top has a port (32) for drawing a partial vacuum in the receptacle (12) (FIGS. 1, 2, and 5; COL. 1, lines 44-52 and 62-65). The receptacle (12) has a shoulder (18a) encircling along an inner edge (18) of the open top for supporting the plate (16) across the open top (see FIGS. 1, 2, and 5-8; COL. 1, lines 44-61). The vacuum manifold is designed to produce a vacuum-induced flow through all the through-passages (38) of a multi-well plate, and the adapter renders the vacuum manifold (10) usable for producing vacuum-induced flow through one or a plurality of filtering components (70) terminating in male portions of male-female-type airtight manually operable connectors (see ABSTRACT; FIGS. 1-8; COL. 1, lines 44-65; COL. 2, lines 22-30; COL. 3, lines 13, 14, and 20-39).

Limb does not explicitly disclose an internal shoulder encircling the open top and sized to receive the plate. However, Roberts et al. disclose a receptacle (64) with an internal shoulder encircling the open top sized to receive a plate with a plurality of separation columns (see FIG. 2; COL. 3, lines 52-59). The configuration ensures appropriate alignment and airtight connection between the receptacle and plate to maintain a sufficient vacuum for separation processes. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Limb to include an internal shoulder encircling the open top and sized to receive the plate as in Roberts et al. for appropriate alignment and airtight connection between the receptacle and plate for a sufficient vacuum in separation processes.

Art Unit: 1743

10. Alternatively, claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,832,842 to Limb in view of U.S. Patent No. 5,603,899 to Franciskovich et al. and U.S. Patent No. 6,491,873 to Roberts et al.

Referring to claim 1, Limb discloses a vacuum manifold (10) for accommodating an adapter and receptacle (12) (see ABSTRACT; FIGS. 1, 2, 5, 6, and 8; COL. 1, lines 44-47). The adapter comprises a plate (16) and plurality of individually removable plugs (84) (see FIGS. 1, 2, 5, 6, and 8; COL. 1, lines 44-47; COL. 3, lines 3-30). The plate (16) has a plurality of through-passages (38) embedded with a female portion (53) of a male-female-type airtight manually operable connector (52,53) (see FIGS. 1, 2, 5, 6, and 8; COL. 1, lines 66 and 67; COL. 2, lines 36-51 and 64-68; COL. 3, lines 1 and 2). Each of the plugs (84) is shaped to mate with a through-passage (56) of one of the female portions (53) to form a substantially airtight closure of the through-passage (56) (see FIG. 8; COL. 3, lines 3-30). The receptacle (12) with an open top has a port (32) for drawing a partial vacuum in the receptacle (12) (FIGS. 1, 2, and 5; COL. 1, lines 44-52 and 62-65). The receptacle (12) has a shoulder (18a) encircling along an inner edge (18) of the open top for supporting the plate (16) across the open top (see FIGS. 1, 2, and 5-8; COL. 1, lines 44-61). The vacuum manifold is designed to produce a vacuum-induced flow through all the through-passages (38) of a multi-well plate, and the adapter renders the vacuum manifold (10) usable for producing vacuum-induced flow through one or a plurality of filtering components (70) terminating in male portions of male-female-type airtight manually operable connectors (see ABSTRACT; FIGS. 1-8; COL. 1, lines 44-65; COL. 2, lines 22-30; COL. 3, lines 13, 14, and 20-39).

Art Unit: 1743

Limb does not explicitly disclose a chromatographic medium within the male portions. However, it is well known in the art to provide a chromatographic separation medium as evidenced by Franciskovich et al. Franciskovich et al. disclose chromatographic separation medium above the filter fixed within the through-passage of the body of a separation column for entrapping specific constituents of the sample to be separated (see FIG. 5; COL. 3, lines 54-67; COL. 4, lines 1 and 2). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the vacuum manifold of Limb to include a chromatographic separation medium above the filter as in Franciskovich et al. to entrap specific constituents of the sample to be separated.

Limb does not explicitly disclose an internal shoulder encircling the open top and sized to receive the plate. However, Roberts et al. disclose a receptacle (64) with an internal shoulder encircling the open top sized to receive a plate with a plurality of separation columns (see FIG. 2; COL. 3, lines 52-59). The configuration ensures appropriate alignment and airtight connection between the receptacle and plate to maintain a sufficient vacuum for separation processes. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Limb to include an internal shoulder encircling the open top and sized to receive the plate as in Roberts et al. for appropriate alignment and airtight connection between the receptacle and plate for a sufficient vacuum in separation processes.



Art Unit: 1743

9. Alternative, claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent No. 4,832,842 to Limb in view of U.S. Patent No. 5,603,899 to Franciskovich et al.

Referring to claim 3, Limb discloses a vacuum manifold (10) for accommodating an adapter and receptacle (12) (see ABSTRACT; FIGS. 1, 2, 5, 6, and 8; COL. 1, lines 44-47). The adapter comprises a plate (16) and plurality of individually removable plugs (84) (see FIGS. 1, 2, 5, 6, and 8; COL. 1, lines 44-47; COL. 3, lines 3-30). The plate (16) has a plurality of through-passages (38) embedded with a female portion (53) of a male-female-type airtight manually operable connector (52,53) (see FIGS. 1, 2, 5, 6, and 8; COL. 1, lines 66 and 67; COL. 2, lines 36-51 and 64-68; COL. 3, lines 1 and 2). Each of the plugs (84) is shaped to mate with a through-passage (56) of one of the female portions (53) to form a substantially airtight closure of the through-passage (56) (see FIG. 8; COL. 3, lines 3-30). The receptacle (12) with an open top has a port (32) for drawing a partial vacuum in the receptacle (12) (FIGS. 1, 2, and 5; COL. 1, lines 44-52 and 62-65). The receptacle (12) has a shoulder (18a) encircling along an inner edge (18) of the open top for supporting the plate (16) across the open top (see FIGS. 1, 2, and 5-8; COL. 1, lines 44-61). The vacuum manifold is designed to produce a vacuum-induced flow through all the through-passages (38) of a multi-well plate, and the adapter renders the vacuum manifold (10) usable for producing vacuum-induced flow through one or a plurality of filtering components (70) terminating in male portions of male-female-type airtight manually operable connectors (see ABSTRACT; FIGS. 1-8; COL. 1, lines 44-65; COL. 2, lines 22-30; COL. 3, lines 13, 14, and 20-39). While Limb does not explicitly disclose a chromatographic medium within the male portions, it is well known in the art to

Art Unit: 1743

provide a chromatographic separation medium as evidenced by Franciskovich et al.

Franciskovich et al. disclose chromatographic separation medium above the filter fixed within the through-passage of the body of a separation column for entrapping specific constituents of the sample to be separated (see FIG. 5; COL. 3, lines 54-67; COL. 4, lines 1 and 2). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the vacuum manifold of Limb to include a chromatographic separation medium above the filter as in Franciskovich et al. to entrap specific constituents of the sample to be separated.

***Response to Arguments***

10. Examiner thanks Applicant for their explanation and amendments. However, new issues have been raised or some issues have not been resolved.

11. Applicant's arguments with respect to claims 1 and 3 have been considered but are moot in view of the new ground(s) of rejection.

12. Applicant's arguments filed 11/18/2002 have been fully considered but they are not persuasive.

In regard to the terms "interchangeably accommodating" in claim 1, it seems as if the individual columns cannot be supported alone in the vacuum manifold. The column(s) appear to need be within the through-passages or wells of the plate in order to be supported on or within the receptacle otherwise the column(s) would fall into the manifold. Furthermore, if the manifold is accommodating the multi-well plate, then limitations should directed towards the wells and not the columns.

Examiner has withdrawn all other 112 rejections based on amendments and explanations.

Applicant argues that the disclosure of Lim does not anticipate the invention as claimed. A key component is the male-female-type airtight connector. Applicant points out that the closest component in the Limb disclosure is the lower end of the filter unit (i.e. the tubular stem 68) and the shank 86 of the stopper and the tubular boss 53 into which the tubular stem and the shank are separately inserted. Applicant argues that these parts are not “connectors” as the term is commonly understood. Applicant further argues that the tubular stem does not join the boss nor does the shank join the boss—they merely rest inside the boss. Applicant further argues that they are merely in contact and can be readily moved up and down by simple lifting, and there is no mechanical connection between them. Applicant further argues that the o-rings do not hold the parts together and all they do is prevent leakage of fluid around the stem or shank. Applicant states that the parts do not meet the recitation of “connector” in Applicant’s claim nor do they suggest a connector.

According to Merriam Webster Collegiate Dictionary, connect is defined as to become joined. The broadest reasonable interpretation of a connector is something that joins or connects. The tubular stem (68) connects with the female portion (53) through the hole (56) within the female portion (53), and the o-ring (60) provides the mechanical connection with the female portion since the stem (68) is fitted through the female portion (53) and sealed by the o-ring (60), such that the o-ring connects the two elements together by physical contact (see COL. 2, lines 64 and 65). The stem (68) may engage

Art Unit: 1743

another part of the female portion (53) to stably support the filter unit in proper vertical position (see COL. 2, lines 65-67). The shank or plug (86) connects with the female portion (53), as the shank is inserted into the female portion (53) and engages the annular shoulder (62) of the female portion (53) to provide an airtight closure of the through-passage. The o-ring (60) seals the shank (86) and stoppers the hole within the female portion (53) (see COL. 3, lines 7 and 8). The o-ring does provide mechanical connection as it seals the stem with the female portion (53) and shank (86) with the female portion, such that there is physical connection or contact between the stem and female portion and between the shank and female portion. Furthermore, it is not necessary for mechanical connection in order to fulfill the definition of connector. The parts do meet the recitation of "connector" in the claims whether the stem is treated as the male portion since it fits into the female portion or whether the threaded region (64) of the boss is treated as the male portion since the female and male portions are connected together and the threaded region (64) fits within an aperture of plate (16) and the shank or plug fits into the female portion. Examiner notes that the preamble was and has been construed as intended use in some sense. The male portion is recited in the preamble and not the body of the claim. The male portion is not positively recited.

Applicant points out that Franciskovich et al. fails to disclose any of the elements addressed previously that are missing from the Limb disclosure.

Examiner notes that Franciskovich et al. was used to provide the chromatographic separation medium missing from the Limb disclosure although it was not necessary since

Art Unit: 1743

.the preamble was construed as intended use. As explained above, Limb does provide the elements in the claims.

### *Conclusion*

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art includes one or more limitations of the claims. U.S. Patent No. 5,603,899 discloses connectors with a screw-on cap. U.S. Patent No. 6,491,873 to Roberts et al. discloses separation columns. U.S. Patent No. 4,810,471 to Wachob et al. provides columns with connectors. U.S. Patent No. 5,037,544 to Snyder shows connectors with caps held in apertures of a plate. U.S. Patent No. 4,775,629 to Kuhl et al. shows connectors with caps in a plate. U.S. Patent No. 5,178,779 to Girona et al. shows connectors with caps in a plate.

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Art Unit: 1743


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Quan whose telephone number is (703) 305-1947. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (703) 308-4037. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 879-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Elizabeth Quan  
Examiner  
Art Unit 1743

eq  
January 25, 2003

  
Jill Warden  
Supervisory Patent Examiner  
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